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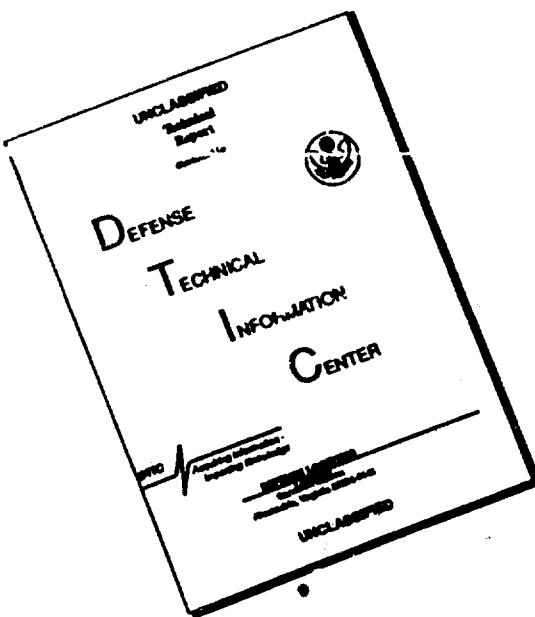
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CLINICAL STUDY AND TREATMENT
OF INFECTIOUS DISEASES OVER FIFTY YEARS
(PROGRESS MADE AND RECURRENT PROBLEMS)

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G. P. Rudnev

In 1967 the peoples of the Soviet Union are marking the period of a half-century of existence of the Soviet State.* In the fifty years which have passed since the Great October Socialist Revolution our country has made enormous progress in all fields of scientific and economic activity. This is also true in full measure of public health, in particular the study of infectious diseases and the fight against them.

It is a familiar fact that under tsarism numerous epidemic diseases -- typhus and typhoid fever, malaria, dysentery, scarlet fever, diphtheria, smallpox, and at times Asiatic cholera and the plague -- were continually flaring up on the territory of Russia. The Soviet Power received a most difficult inheritance from tsarist Russia. During the years of the civil war the situation with regard to the disease rate deteriorated even more because of famine and economic dislocation. This was reflected in V. I. Lenin's famous words about typhus. The struggle against epidemics acquired State significance and demanded huge effort.

As a result of the unceasing attention paid by the state to public health problems and of general progress the country of the Soviets had by the beginning of the Second World War achieved a

*Article written for the Fiftieth Anniversary of the Great October Socialist Revolution.

flourishing culture and economy, as well as unprecedented well-being in regard to epidemic diseases. In the years of the Great Patriotic War (1941-1945) the destruction wrought by the Hitlerite troops in the territories which they temporarily usurped, the evacuation and re-evacuation of great masses of population, the economic difficulties, and other wartime factors furthered a new rise in the rate of dysentery, tularemia, hepatitis, brucellosis, etc. At the end of the war these serious public-health and epidemiological consequences were eradicated in comparatively short periods, and this once more clearly demonstrated not only the superiorities of the Soviet public-health system, but also the strength of the Soviet system.

In the twenty-odd years since the war the Soviet public-health service and medical science have continued their unswerving development and medical education has improved. Great successes have been achieved in the struggle against infectious diseases, many of which -- Guinea worm or dracunculosis, glanders, relapsing fever, smallpox, etc. -- have completely disappeared. The attainments of Soviet medicine in the fight against malaria (P.G. Sergiyev), infantile paralysis (M.P. Chumakov), particularly dangerous infections (N.N. Zhukov-Verezhnikov, Ye.I. Korobkova, Z.V. Yermol'yeva, et al.), and against the group of so-called children's infections (e.g., diphtheria), etc. are common knowledge.

On this basis it is natural to state that some infectious diseases have been completely eliminated in the USSR and that the number of others has dropped (V.D. Timakov, I.I. Yelkin). These achievements should be a stimulus for further united efforts toward solving the recurrent problems of public health, including those in the anti-infectious disease field.

A huge role in the formulation of these problems has been played by the special decree of the Central Committee of the Communist Party and of the Council of Ministers of the USSR of 14 January 1960, "On Measures for the Further Improvement of Medical Service and Public Health of the Population of the USSR."

In the last five years unique medical science forums of great interest for solution of the problems mentioned have been the Fourteenth All-Union Congress of Microbiologists, Epidemiologists, and Infectious Disease Specialists (29 June-4 July 1964, Moscow); the Second All-Russian Congress of Microbiologists, Epidemiologists, and Infectious Disease Specialists (21-25 June 1966, Gor'kiy); and the Ninth International Congress on Microbiology (24-30 July 1966, Moscow); as well as congresses in the republics and krays, etc. The subjects of these congresses and the principal findings published in the literature may be briefly summarized as follows.

The cardinal theoretical problem for the modern infectious dis-

ease clinic is further study of the essence of the infectious process. It must be recalled that this problem has also been treated before, both in experimentation (P.F. Zdrodovskiy, L.A. Zil'ber, V.D. Timakov, Z.V. Yermol'yeva, V.M. Zhdanov, et al.) and in clinical practice (A.F. Bilibin, K.V. Bunin, I.L. Bogdanov, et al.). If we proceed from our modern concepts of the infectious process, in particular from genetic positions, it becomes obvious that we must review our former concepts and develop a number of new ones important for diagnosis and therapy. Study of the role of DNA and RNA in their clinical aspect is now an urgent problem whose solution requires the united efforts of theoreticians and clinicians. The theories of I.I. Mechnikov, N.F. Gamaleya, and also Sel'ye [name transliterated from the Russian].

The problem of early diagnosis continues to remain pressing in infectious illnesses, but early clinical diagnosis has in recent years become intricate because of the sharp increase in the number of atypical and (subclinically) disguised cases of disease (M.G. Danilevich, N.I. Ragoza, G.P. Rudnev, and others).

This evolution in the course of bacterial dysentery, typhoid-paratyphoid infections, rickettsial diseases, scarlet fever, brucellosis, and other infectious diseases requires deeper study and forms one of the most urgent problems in the modern clinic of infectious diseases. This evolution, noted in almost all countries of the world, is by no means identically expressed everywhere; therefore a number of additional problems arise, in particular the need to study the evolution of infectious diseases in the nosogeographic aspect, zonally by continents of the world, and also globally.

The evolution of the modern clinical picture also inescapably provokes evolution in diagnostics. This involves all the principal diagnostical methods -- clinical, epidemiological, laboratory, instrumental, roentgenological, etc. Progress in biology, chemistry, physics, and other adjacent disciplines, as well as of medicine as a whole, also exerts an effect on the diagnosis of infectious illnesses.

Study of the specific forms of the evolution of diagnostics belongs among the most urgent problems of the modern infectious disease clinic.

Clinical study carries on ceaseless re-examination of old, even classical methods of diagnosis and sifts out the obsolescent which have partially or completely lost their functional value, replacing them with more efficient ones and also introducing new methods. The admissibility of this process is clear, for the process cannot be avoided, although it is permissible only in the framework of clinical authority, pathogenetic necessity, and advisability. This is established by clinical verification. Some of the methods introduced, including that of intra vitam paracentesis, always require a strict approach on the part

of the physician and differentiated selection with observance of the ancient rule of Noli nocere (Do no harm).

Among the important tasks of the modern infectious disease clinic is study of the convalescent phase, possibility of relapse, specific and nonspecific complications, development of the phenomenon of infection-carrying (so-called bacteria-carrying), side effects caused by medications, and the consequences of diseases which have been withheld.

We must also dwell on the problem of the study of mixed infections (G.P. Rudnev) which has become considerably more complicated in recent years and acquired importance in the clinical treatment of diseases not only of children, but also of elderly people. Against a background of considerably lowered resistance to bacterial and other infections the role of virus diseases has significantly increased, particularly that of epidemic viral hepatitis and influenza. This brings to the fore matters of prophylaxis, as well as timely diagnosis and efficient treatment. It must be emphasized that these tasks are equally urgent for epidemiologists, therapists, neuropathologists, pediatricians, virusologists, and others.

The heightened attention to these viral infections is associated with their extensive distribution, but the development of specific measures must proceed without detriment to the struggle against bacterial infections.

Clinico-epidemiological thinking on the part of the physician, prophylactic treatment, and the earliest possible diagnosis not only keep their timeliness, but even take on greater meaning in connection with the atypical and disguised clinical picture of most infections.

The development of efficient methods of therapeutic treatment has been and remains one of the most pressing problems in the modern infectious disease clinic. In the last 15-20 years, to be sure, in connection with the general progress in medicine, the development of general biology, biochemistry, pharmacology, clinical physics, etc., with progress in therapy (Ye.M. Tareyev), surgery (B.V. Petrovskiy), neurology (Ye.V. Shmidt), pediatrics (G.N. Speranskiy), and other clinical disciplines certain successes have been gained in this field.

The chief problem remains the development of a specific therapy. For many years serotherapy, vaccinotherapy, phagotherapy, etc. have predominated here. This line must be extended farther, but on a higher level. Progress in chemotherapy (Sh.D. Moshkovskiy) has had an especially beneficent effect on the treatment of amebiasis, many types of helminthiasis (N.N. Plotnikov), and malaria (P.G. Sergiyev).

Antibiotics have in a brief period come into extensive use and have become working drugs in the daily practice of every sort of physi-

cian, particularly the infection specialist, but analysis of the data amassed requires that a number of corrections and limitations be introduced into the indications for the use of these drugs. The use of antibiotics may at times be contraindicated, as has often been noted in the medical press (G.P. Rudnev, Kh.Kh. Planel'yes, Z.V. Yermol'yeva). The elaboration of a rational antibiotic therapy, including the application of the newest antibiotics, must be considered a very important problem. Here must be offered not only effective courses, systems, and dosages be proposed, an evaluation of specific preparations in definite nosological forms be given, but also efficient combinations (on the principle of synergism of medicaments). Incidentally it is important to study the "shady sides of treatment" (A.F. Bilibin) -- allergy to medicaments and side reactions right up to the development of so-called medicine illness (Ye.M. Tareyev). An important problem nowadays is the development of superficial and visceral forms of candidiasis (P.N. Kashkin) and of staphylococcal illnesses (Kh.Kh. Planel'yes, G.V. Vygodchikov) to and including sepsis.

The problems of varieties of pneumonia (N.S. Molchanov, Yu.F. Dombrovskaya) and the clinical study of the consequences of infections withstood, and residual phenomena (e.g., brucellosis, Botkin's disease, toxoplasmosis, etc.) are already beyond the limits of the clinical study of infectious disease.

A relatively new division is treatment with corticosteroids. It has justified itself in such dread forms of hepatitis as acute dystrophy of the liver, in trichinosis, lupus erythematosus, etc. Here, too, of course, consideration and prophylactic treatment of the side effects possible in treatment (particularly protracted) with corticosteroids are requisite.

All the above-listed problems also require study in the age aspect -- great attention must in particular be given to elderly and old patients. Right here the problems of mixed infections lie very near, while at present especial importance is being acquired not so much by combinations with other infections (except tuberculosis) as with other somatic processes, including types of leucosis, collagenosis, blastomitosis, etc.

In looking at the path traveled by Soviet public-health protection in half a century we can confirm with satisfaction that the study of infection, and in particular the infectious disease clinic, has passed through a number of stages of development and has unquestionable achievements.

In the last fifty years, for example, the clinical study and treatment of infectious diseases took final form as an independent discipline which now occupies a respected place and is represented in all medical institutes and institutes for advanced training of

physicians. This is of great significance in the training of personnel. A network of hospitals and departments for infections, consulting offices for infectious diseases, and other forms of hospital and non-hospital assistance has been developed in the practical public-health system.

For the training of specialists in infectious diseases Soviet clinicians and infection specialists have written textbooks and manuals (for students and doctors) which have become famous even abroad.

There has been practical and theoretical growth in trained cadres of physicians specializing in infections, pediatricians, maliologists, tropicologists, helminthologists, virusologists, and so on. The development of theoretical and clinical medical disciplines -- epidemiology, pathophysiology, pathological anatomy, biochemistry, therapy, pediatrics, etc. has contributed to the rise in the professional level of infection specialists.

Soviet infection specialists have presented an original treatment of the infectious process (e.g., the so-called three lines of pathogenesis according to A.A. Koltypin); have isolated a number of forms of tularemia (anginal-bubonic, B.N. Stradomskiy; abdominal, G.P. Rudnev, Ye.D. Polumordvinova; pulmonary, G.P. Rudnev, A.A. Vol'ferts); have clinically described hemorrhagic fevers (A.F. Bilibin, E.A. Gal'perin, B.L. Uglyumov), malaria (B.N. Stradomskiy), etc. They have worked out original systems for the pathogenesis of brucellosis, tularemia, the plague, smallpox, and hepatitis (G.P. Rudnev); clinical classifications of types of salmonellosis (A.F. Bilibin), dysentery (A.F. Bilibin, I.L. Bogdanov and I.V. Seppi), tularemia (G.P. Rudnev), brucellosis (G.P. Rudnev), the plague (G.P. Rudnev), influenza (E.A. Gal'perin), tetanus (K.M. Loban), meningitis (V.I. Pokrovskiy et al.). They have worked out original methods of treatment -- immunochemotherapy (K.V. Bunin), two-stage vaccinotherapy for brucellosis (G.P. Rudnev), shortened period of treatment for dysentery (A.F. Bilibin), etc.

In a short periodical article it is impossible to list all that has been achieved in the clinical handling of infection, but from the above the scale of the work accomplished and the recurrent problems facing us is clear. May I call to mind that the Fourteenth All-Union Congress of Microbiologists, Epidemiologists, and Infection Specialists noted the following main research specialties in the infectious disease clinic: clinical immunology, clinical biochemistry and biophysics, the evolution of the clinical treatment of basic infections, analysis of modern methods and means of treatment, nosogeography, and the clinic of specific infections. Qualified personnel, to whose training special attention must be devoted, are new for the conduct of successful research.